CAPITAL APPLE

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Meeting Information

The next meeting of the Wellington Apple Users Group will be on :

Thursday, 26'th of October, 1989

at

St Marys College

starting at

7pm.

The doors will be open at 6.30 pm to let people get together, and the meeting itself will begin at 7pm SHARP. This month, we will be presenting hands-on sessions for some exciting new products.

For the Apple //:

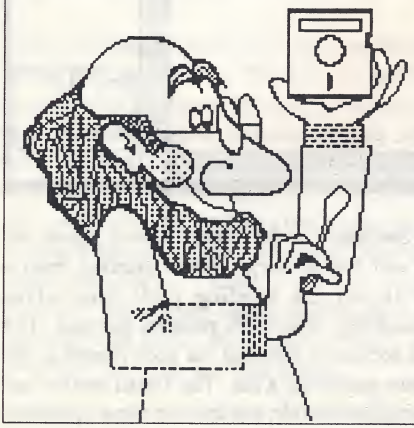
AppleWorks 3.0

Come and see all those great features you've been waiting for.

For the Mac:

The Hewlett Packard DeskWriter

The HP DeskWriter is set to be the most exciting development in the printer world this year - it costs only a bit more than an ImageWriter, but gives you virtually identical printout to the LaserWriter.



The Doctor is In !

At all meetings we run help clinics for major machines and software.

These clinics are run by nominated "experts" who will be announced each evening by the Meeting Co-ordinator. The idea is that you can ask the "Doctors" about any problems (hardware, software, interfacing etc) you may be having. If the "Doctor" can't cure your problem he will put you in touch with a specialist for further diagnosis and comprehensive treatment.

F E A T U R E

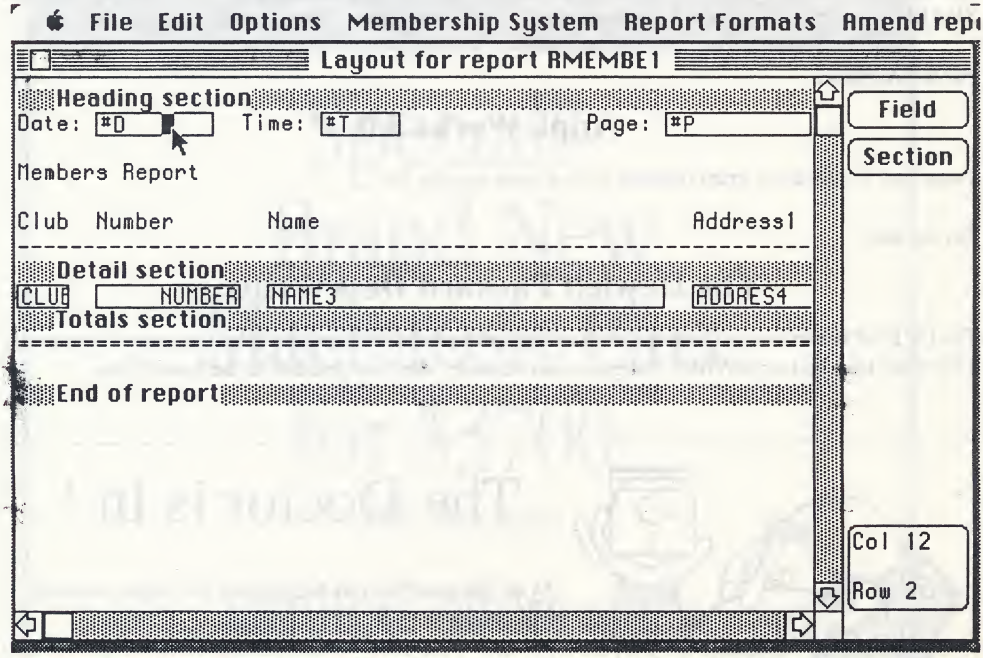
Databases

Part 2

by David Wilson

Reports

Reports are exceptionally easy to create, especially if you wish to 'dump' or print an entire file. You can include or exclude sorting, and include or exclude search formats. The report layout is 'Painted' in exactly the same way that the screens are. The difference is that you have 240 columns of the report that you can use, and not to mention that you can do some very fancy totaling of fields. The following report layout is a standard one created by Omnis 3.25.



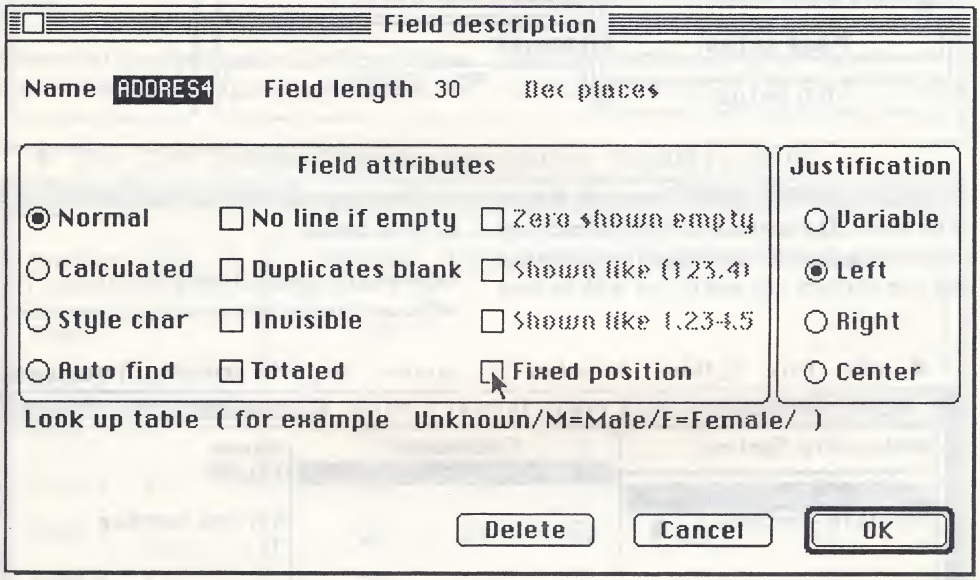
The tedious task of creating a standard report layout, which you may or may not use, is eliminated when you use Omnis Express. Even if you do not use the reports created by Omnis Express, you can used the layouts for cutting and pasting between reports. This, if used correctly, can save lots of time.

The 'Sections' in the report shown above are fairly self explanatory. When printing from a entry layout the heading print themselves automatically. The totals print on demand. The Detail section is repeated for each record in the file, thus producing a list. The Detail section can be more than one line, and this can cause a problem

when printing across pages. When specifying printing criteria for the Detail section, you can with the selection of a radio button say 'leave 2 lines and print if more than 5 lines before the end of the page'.

The field characteristics are another difference between the Entry layouts and Report layouts. As shown below, they are fairly self explanatory. The 'Style char' allows you to specify 'Formatting' characteristics such as **bold**, **expanded** etc... 'No line if empty' says that if this field does not contain anything, do not print the line. This is very useful if you are printing a list of addresses and the address is spread over 4 lines. It is not necessary to print some of the lines if they are empty or blank.

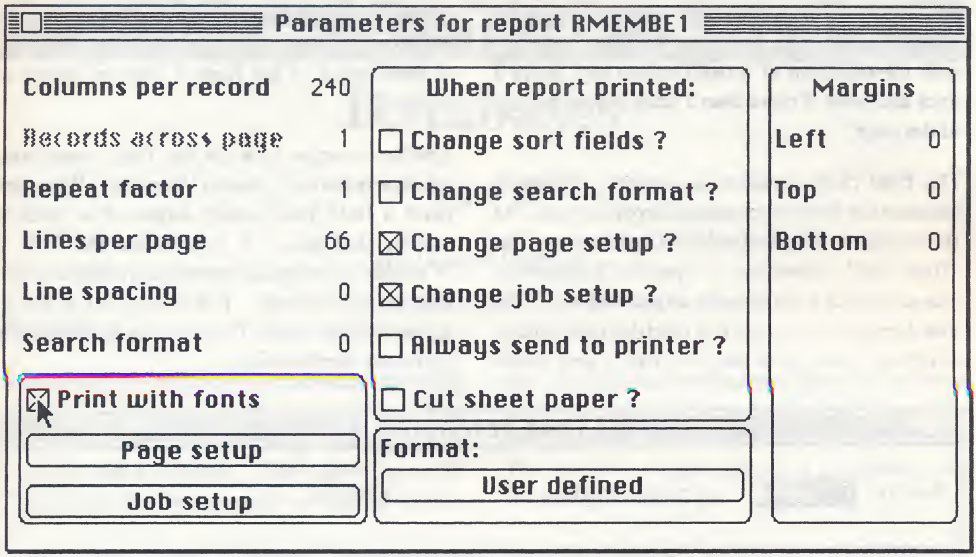
Another strange item on the Field description window is the radio button 'Variable'. When you paint a field you usually expect it to print in exactly that spot. If you define the field as 'Variable' it will print immediately after the field that has just printed. It will slip left to but up against the last field. This is a very nice feature in particular applications.



There are many parameters that can be altered when defining reports. The left, top and bottom margins can be altered through this screen, as can the 'Print with fonts' criteria. Omnis 3.25 can print with fonts as shown below, but in my opinion it is not very good. It is almost as if each line must be a particular font, and it s a real nightmare when trying to sort out exactly what will fit on a page. Later versions of Omnis are much improved. Omnis 5 makes and exceptionally good job of printing with fonts. More information on Omnis 5 will be revealed in a later article.

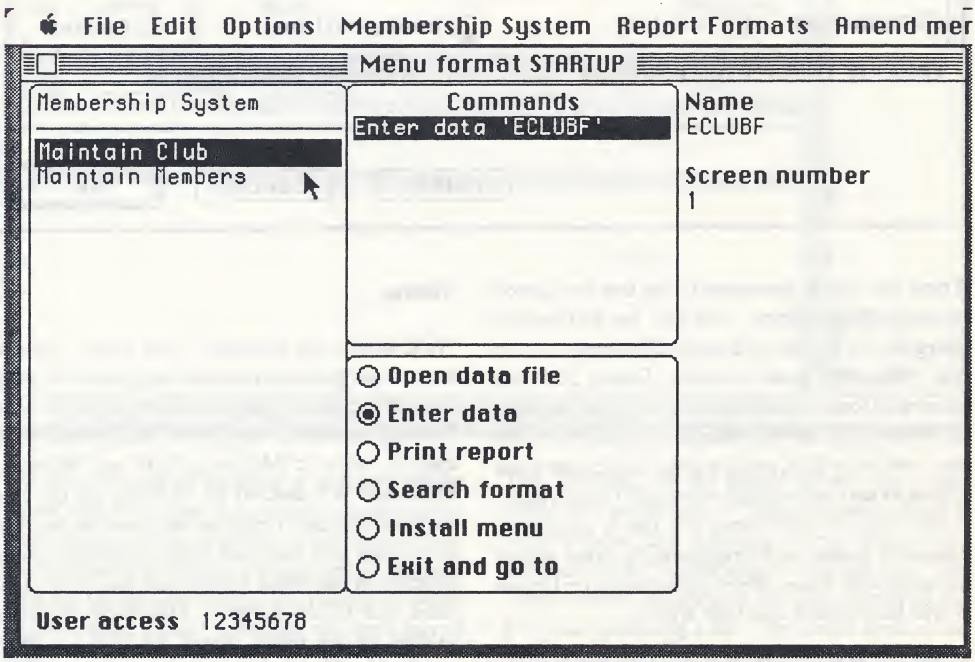
Menus

Well, what could be easier. Your ability to create easy to use pull down menus are limited by your own imagination. In the example below, the heading 'Membership System' is the menu, what appears below it 'Maintain Club' and 'Maintain Members' are entered by clicking on the line required and then typing in the menu name. The action that you want that item to perform can be defined by the radio buttons on the lower right hand side of the screen. The menu shown is calling up the Entry layout 'ECLUBF' screen number 1. The access to that particular item is



controlled by the User Access item at the bottom if the screen. This is set to 1 through 8 for each new menu item defined. This is changed by eliminating the user numbers that you do not wish to have access to that particular menu item. See 'Security' for more details.

Reports can be printed directly from a menu. This will cause the report to be run and print as specified.

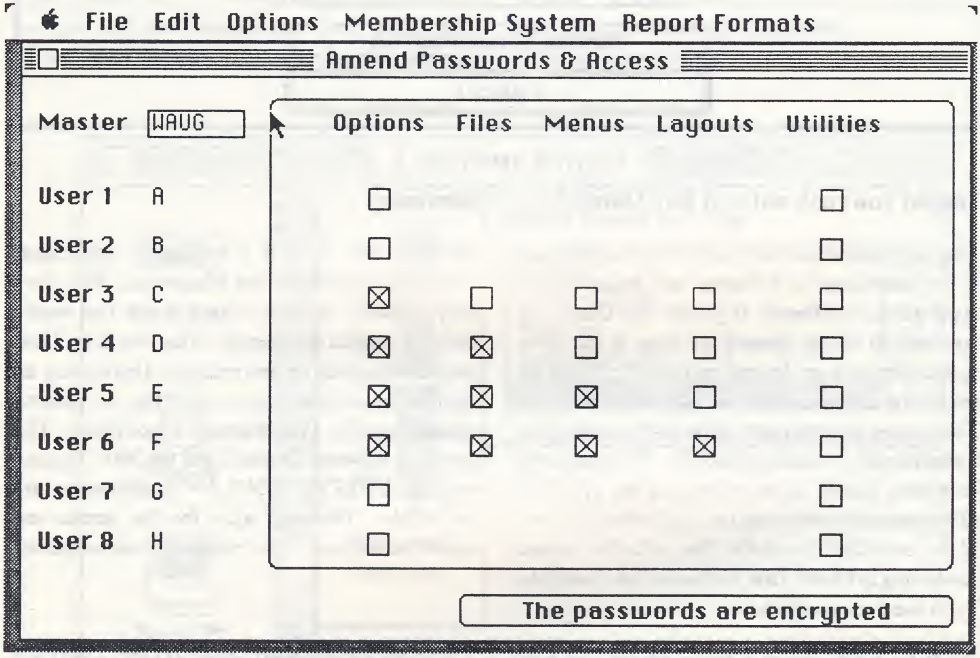


Security

Omnis security is not brilliant, short of building your own sophisticated security system, but is is functional and perfectly adequate for many small businesses. The Omnis security system allows for a total of nine users. For users 1 through 8 their access can be controlled firstly by the screen shown below, once again self explanatory, and secondly by altering the access as shown above. The Master user, usually the developer, has complete access. Security can be defined for screens as shown in the menu, for menus, and reports.

When ever I have developed an Omnis application that requires security, I have found it best if the security is the last thing that is done. It is also easier if the "Menus' are the only place that security is defined. If you spend a lot of time setting up security on different screens and reports, and then find that the menu does not match the security requirements, you end up scratching you head for a while. It is also easier to just alter the menu when a change in the security is required, this saves having to alter the individual reports and screens.

Please note that this may only apply if you do not allow your users to create their own screens, reports and menus. If you do allow your users to do this, leave me out of it! That's when I go home.

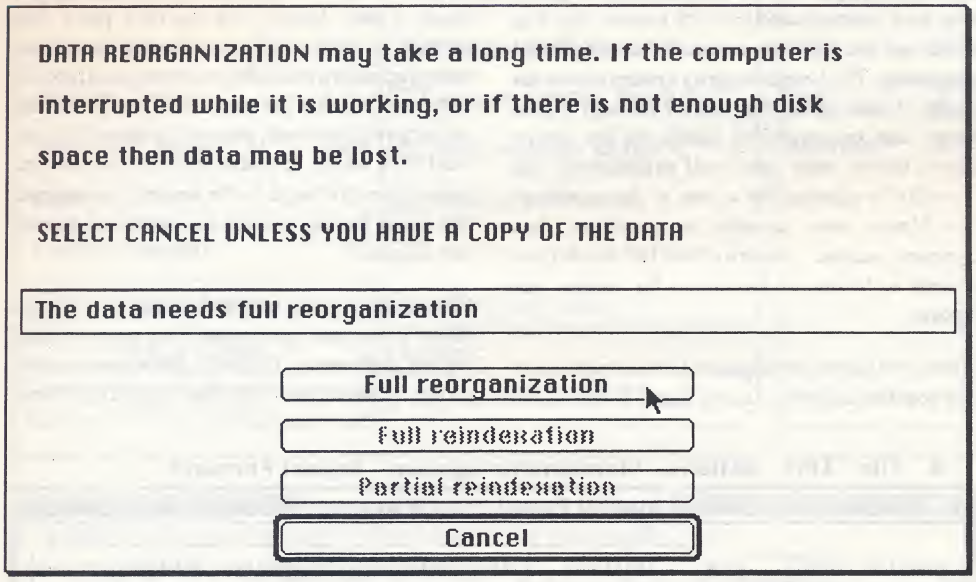


The Beginning

When I began this article, I talked about defining files and having to get it right. Don't forget anything etc... Well, what happens if you do?

Omnis is flexible, it changes as you change. Omnis lets you add and delete fields as you need or do not need them. But unlike other 'Flat file', 'memory resident' databases, the change is not immediate. The file or files affected must be reorganised. Just like on a Mainframe. What this means is that a new file must be created from the old. The data from the old file is transfered to the new file, only it will place blanks or zeros in the new fields.

Omnis makes this job so easy you can forget to do it. However you are told very quickly that things no longer make sense. So go back and 'Reorg' the database.


DATA REORGANIZATION may take a long time. If the computer is interrupted while it is working, or if there is not enough disk space then data may be lost.
SELECT CANCEL UNLESS YOU HAVE A COPY OF THE DATA
The data needs full reorganization
Full reorganization
Full reindexation
Partial reindexation
Cancel

Should you rush out and buy Omnis?

That is one question that I will not answer for you. Every individual is different, and indeed every application is different. If you do buy Omnis, be prepared to invest pleanty of time to get your application to your desired end result. If you are not reasonable conversant with Systems Analysis Techniques, you may not realise just how complex a small application might become. You may even be wise to 'invest' some money and hire a Analyst / Programmer to develop the application for you. Make sure that he or she has actually written something in Omnis first, and see some examples. Even use the examples.

While your application is being written, get hold of some pre-releases and see how it's going, make sure that it is easy to use, and is beginning to look like you want. Suggest improvements if you would like some. But remember, do not change the 'System Specification' when the application is almost complete.

Summary

Omnis 3 for me was a wonderful application development tool for the Macintosh. It is very easy to drive. So easy in fact, it was two weeks before I needed the manual. That was after I had two small system up and running. Developing an application in Omnis is so much like developing applications for Mainframes it is not funny. The parallels between Omnis 3 and the New Zealand written UNISYS LINC for mainframes are incredible. However after the the screen and report definitions, there endith the resemblance.

This is not the end of my Omnis review. I have not been using Omnis 5 for the past month. I'm still getting used to it, but I have uncovered a number of major differences. There are also lost of new features and some very good enhancements. The mysteries of Omnis 5 may be uncovered next month.

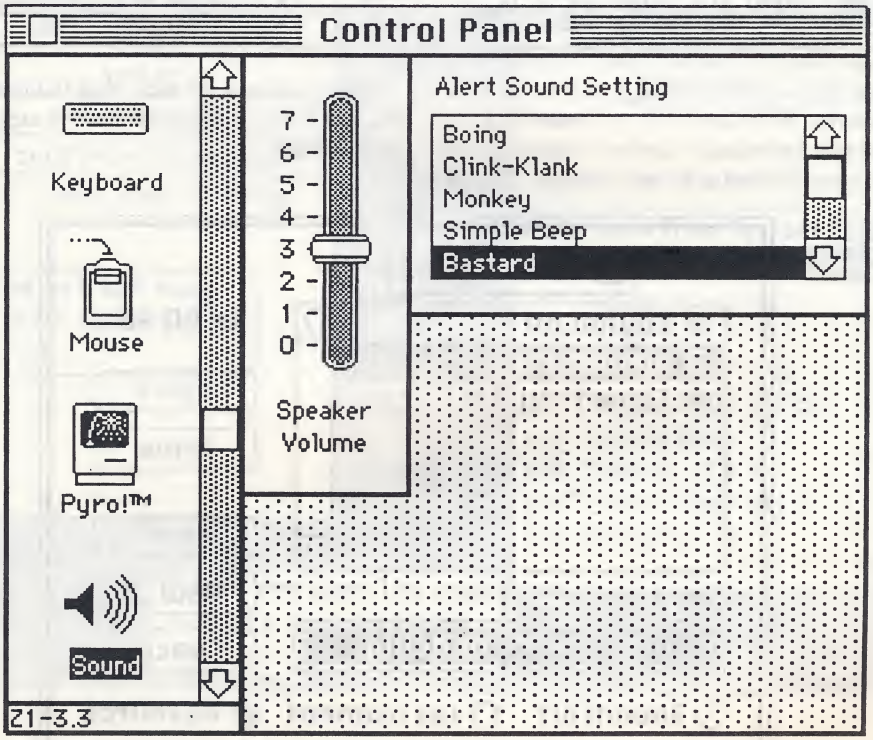
Adding more sounds to your system

by David Wilson

Many Macintosh users of system 5 or 6, will be aware that from the Control Panel they are able to alter the 'Beep' sound. Provided with the system are four sounds, (Bong, Clink-Klank, Monkey, Simple Beep).

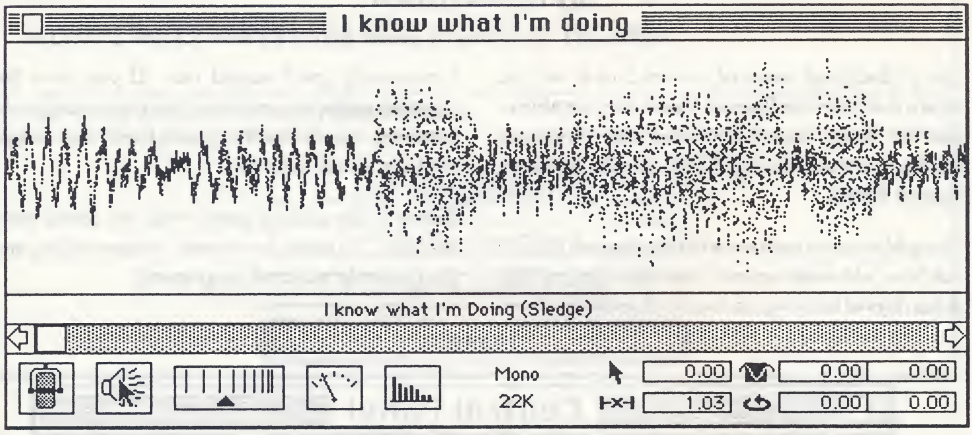
Many Macintosh hackers will have by now figured out how add more sounds into their system file. After days of hacking, and some clues from others, I eventually got it sorted out. If you have the required software packages you can easily add your own sounds into the system folder and change the beep to suit yourself.

Below is the control panel with the sound cdev selected. It shows the current volume setting and the currently selected beep sound.

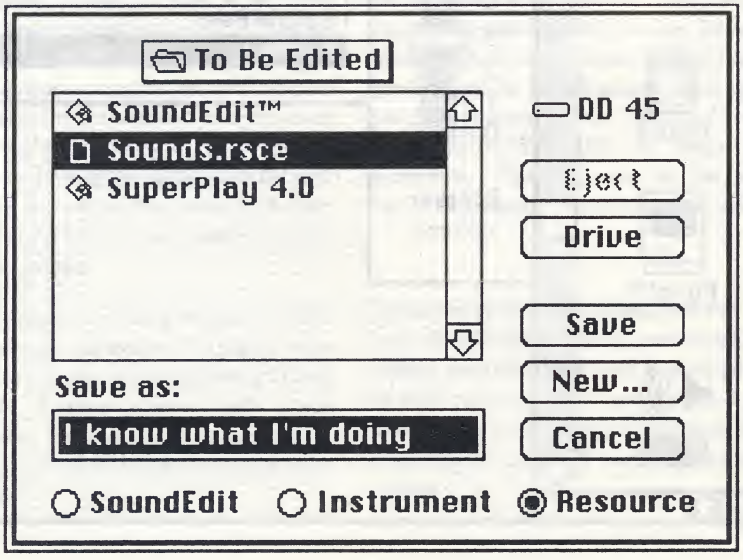


Before you can add sounds into the system folder you have to have the sound or sound idea to start with. For this you can use Mac Recorder (hardware device) or get some of the sounds out of our Public Domain Library. As a general rule, for a beep sound you need something that is short and to the point. The last thing you want is a beep sound that launches into a full blown song or monologue each time a mistake is made.

The ideal sound editor that I have is an application called Sound Edit. It is the software supplied with Mac Recorder. With Sound Edit I cut and pasted until I got a very short piece of sound, origionally digitised from the 'Sledge Hammer' television series. This application is very easy to use.



Now that you have a sound, it must be saved as a resource. With Sound Edit, you can create a file and save the resource sound in it. Within the file, the sound is saved as an 'snd' resource. This part of the operation is the trick, cross this bridge and the rest is easy. I only hope that I've explained it well enough.



Here I've created a NEW file called 'Sounds.rsce'. Within that file Sound Edit is saving the sound titled 'I know what I'm doing' as a 'snd' resource.

The next step is easy, but extremely dangerous. I recommend that you take a backup of your System file before proceeding.

Using Red Edit, open the sound resource file, in this example I've called it 'Sounds.rsce'. Once in that file you can see the 'snd' recource, open the resource. Once the 'snd' recourse is open, you can see all the 'snd' resources. Select and copy the sound that you want.

Next, open the system file. This reveals lots of resources. The only one that we are interested in in the the 'snd' resource. Open the 'snd' recource. You should see the four sounds provided by Apple.

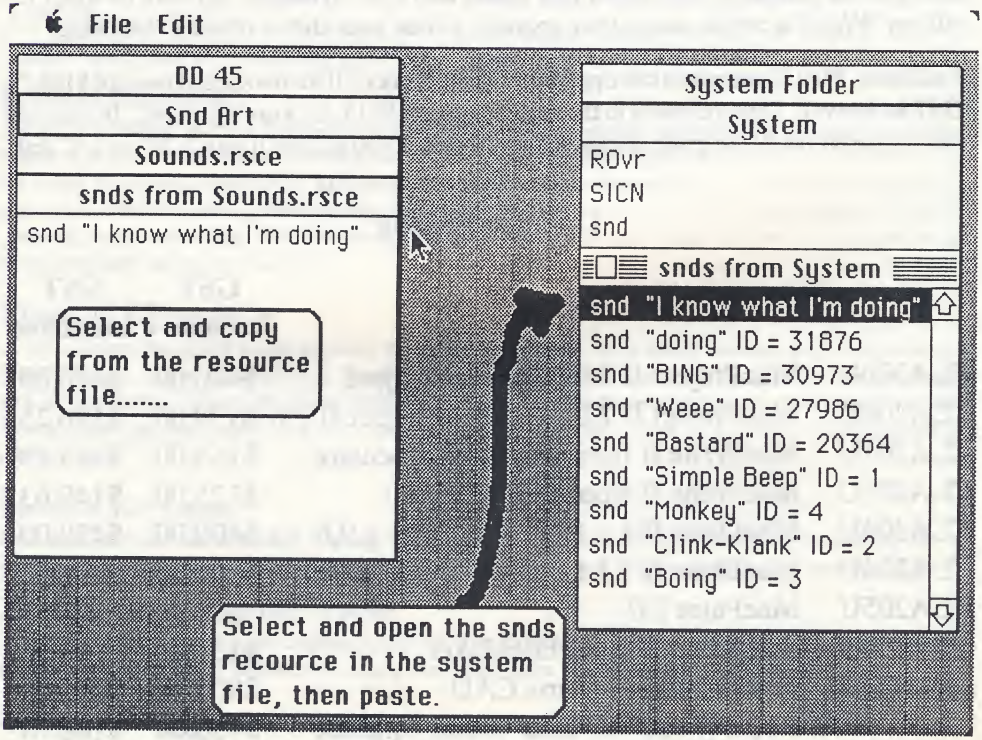
Paste in you sound, and then close all windows and quit Res Edit.

Now that you have quit Res Edit and returned to the Finder, you should be a able to select the Control Panel and the sounds cdev. Select your new sound and click on the speaker volume button to hear your sound.

That is it, a reasonable simple process in that it realy only involves cutting, copying and pasting, but it is a very step by step process and each must follow the other.

You can have fun with your friends and family by changing the sound every night, then they will never know what to expect next.

Share and Enjoy.....


File Edit
DD 45
Snd Art
Sounds.rsce
snds from Sounds.rsce
snd "I know what I'm doing"
Select and copy from the resource file.....
System Folder
System
ROvr
SICN
snd
snds from System
snd "I know what I'm doing"
snd "doing" ID = 31876
snd "BING" ID = 30973
snd "Weee" ID = 27986
snd "Bastard" ID = 20364
snd "Simple Beep" ID = 1
snd "Monkey" ID = 4
snd "Clink-Klank" ID = 2
snd "Boing" ID = 3
Select and open the snds recource in the system file, then paste.

NEWS AND INFORMATION

Claris Upgrade Offer

Personal Computer Systems Ltd (PCS) are the New Zealand distributors for Claris products. Claris Corporation is the software arm of Apple, and their products include MacWrite, MacDraw, MacProject, MacPaint, SmartForms, Claris CAD, FileMaker and AppleWorks (for the Apple II).

Many users of Claris products are not aware that most of the Claris range has been updated over the last few months. For example MacWrite II is a total rewrite of the original MacWrite, and includes such exciting new features as mail merge, custom styles, footnotes, and an updated ruler.

To show its commitment and support to the Wellington Apple Users Group, PCS is offering a special upgrade program. For the Macintosh upgrades WAUG will operate as an upgrade centre, so that you can just send them your master disk (with a cheque). In return for this, PCS will pay WAUG a certain amount per upgrade, so that your club is directly benefiting.

In addition, WAUG members can upgrade to AppleWorks 3.0 for the special price of $168.75 (GST inclusive). This compares to the regular price of $213.75, a saving of $45. In ordering your AppleWorks 3.0 upgrade, please specify whether you require it on a 5.25" or 3.5" disk.

Upgrade Pricing

		GST Exclusive	GST Inclusive
CLA300U	MacProject II 2.0 from MacProject	$400.00	$450.00
CLA200U	MacProject II 2.0 from MacProject II 1.0	$130.00	$146.25
CLA301U	MacWrite II from any word processor	$145.00	$163.13
CLA201U	MacWrite II from MacWrite 5.0	$125.00	$140.63
CLA304U	MacDraw II 1.1 from MacDraw 1.9.6	$400.00	$450.00
CLA204U	MacDraw II 1.1 from MacDraw II	$100.00	$112.50
CLA205U	MacPaint 2.0	$65.00	$73.13
CLA206U	FileMaker II from FileMaker	$130.00	$146.50
CLA207U	MacDraw II to Claris CAD	$800.00	$900.00
CLA001UG	AppleWorks 3.0 User Group Upgrade	$150.00	$168.75

What's New?

MacWrite II	Totally rewritten with over 50 new features; no more rules cluttering up your documents; mail merge; thesaurus; page preview; multiple columns; stationery templates; spell checker; custom styles and much more...
MacDraw II 1.1	Spell checker; presentation manager; "Post-it" notes; enhanced rulers; stationery; PICT2.
MacProject II 2.0	Resource levelling; cross project resource analysis; data import and export; multiple charts; spell checker; unlimited calendars; subproject consolidation.
MacPaint 2.0	Automatic scrolling; tear off tool and pattern menus; enlargement and reduction with editing; takes advantage of larger screens.

SPECIAL OFFERS

3.5" Floppy Disks

Double Sided, Double Density top quality SKC disks are still only $39 a box.

Ribbon Reinking

The club is able to re-ink a number of printer ribbons. Imagewriter, Apple DMP, CItoh 8510 ribbons can be re-inked. These cost $3. Other ribbons can be re-inked also - Epson FX/MX/RX 70/80, Seikosha SP 1000, Panasonic 1080/1090. Still other ribbons have been successfully re-inked, but it depends on the ribbon. Since re-inking these means different drivers for the Macinker, the fee for these is $5. Bring your ribbons to a meeting. We operate an exchange system on Imagewriter ribbons. On others you get your own back at the next meeting.

More on Ribbons

A few ribbons presented to me recently have not been able to be re-inked because they were worn out (small tears and holes in the fabric). For $12 we can supply a new black refill and for $15 we can supply new single-colour refills (red, green, yellow, or blue). In both these cases you need to supply me with the old cartridge, and I will return it to you at the next meeting. We also sell new black Imagewriter ribbons at $15.

Modem for Loan

Our special "free" modem offer is going like hotcakes. There's now about a six month waiting list, so be quick or you'll never get a chance to try out BBSing without having to buy your own modem.

Back Issues of Capital Apple

There are still some issues of Capital Apple. A complete list of the available back issus was published in the March magazine, but they're selling fast! For more information, contact the Editor.

Cables

The user group has a variety of computer cables for sale: printer cables, SCSI interface cables, Mac-to-Mac cables, etc. For more information, contact Mike Eastman, either at a meeting, or phone 787–041.

PUBLIC DOMAIN SHOWCASE

Mac Public Domain

$10.00 each, or $5.00 per entry in the catalogue if you bring your own disk.

Please remember to format all disks you bring to have filled up at the meetings. This will save us a great deal of time. Thanks.

Mac•Education•3
This disk contains Elements 1.2 the 'Table of elements' with some detailed information about each element. Mac Formula is a tool for chemists; particularly for graduate students who are conducting research in the lab and find it necessary to compute molecular weights frequently. Molecular Editor - With Molecular Editor, you can construct and view molecules or crystal structures of over 100 atoms in a three-dimensional representation (this demo version permits molecules of up to 15 atoms only), Orbital Mixing (p bonds), and SpinEcho are also on the disk. All programs are supplied with documentation.

Mac•Education•4
This disk contains ChemIntosh Demo. ChemIntosh Desk Accessory is a powerful drawing tool for chemists. It simplifies the creation of chemical structure diagrams. It can be used with word processors and other applications for drawing. With a word processor, draw the diagram in ChemIntosh DA and then copy it into your document.

Mac•Program•7
On this disk is some C source code. CITADEL BBS 'C' SRC - It is source code for a BBS, and a comment that can be found in one of the documents on the disk goes like this "This the Citadel-86 source. Welcome to the Spaghetti Mill; thank god I didn't author this mess.."

Mac•Program•8
On this disk is ASCII-Char, it provides a table which will display all the characters and their decimal and hexadecimal equivalents. Assembler, DataFlow with documentation and WXMODEM SOURCE - Written in Pascal, this set of files is a sample Windowed Xmodem program for the TCOMM demo BBS system.

Mac•Sounds•9
This disk contains Good Morning Vietnam (Robin Williams), Hey Jimmy (Billy Connoly?), and some Max Headroom sounds, (MAX) Didn't Feel A Thing, (MAX) I sense a problem, (MAX) Thank You 1, and (MAX) Thank You 2.

Mac•Sounds•10
This disk contains "(Mr ED) Hello, I'm Mr ED", Completely Operational, and Network Two. Don't be fooled by the number of sounds on this disk, they are over 100K each.

Mac•Spread•7
More Excel spread sheets are on this disk. Either use the contents of this disk, or use the examples for ideas that you can use towards building your own spread sheets. The range of topics on this disk cover, Finances, Grades & Tests, High Finance, Macros by Steve Dell, Med Fee Stuff, and Payroll.

Mac•Spread•8
The range of topics on this disk cover, Puzzles, Real Estate, Running Tally, Schwab broker fees, Statistics & Macro Templates, and Telcon files.

- The whole Public Domain collection is available at meetings for you to fill'em up right away.
- Mail order copying is prefered. If you include the right postage, FastPost return is guaranteed.
- Bring you own disks or purchase some at the meeting.
- Many of the disks in this library are labeled as 400K disks, this is to ensure compatibility with those members that do not have 800K disk drives.

These disks will be available at club meetings or you can order them by sending a formatted disk and/or payment to:

W.A.U.G. - Macintosh Public Domain
P O Box 6642
Wellington

or phone David Wilson at 286-559 or leave a message onWAUG Shorts 278-817

Apple II Public Domain Notes

by David Empson

See the new public domain catalog for this months' selection. There are a total of six new disks: numbers 17, 18, 28, 29, 30 and 31.

For the Apple IIgs we have released three miscellany disks, and there is a new disk containing animations.

Eamon Problems

I have had several reports of Public Domain Disk #1 being faulty. However, I have not been able to locate any faults (I've extensively tested the disk, including playing EAMON Beginners Cave right through to completion). No problems. I suspect that people playing EAMON are not exiting "cleanly" from the game.

Let me stress this here: for all the EAMON adventures you MUST NOT press Control-Reset or Control–C while the game is playing. If you do this, the data files on the disk that contain information about your character may be affected, and you will no longer be able to play the game properly.

Defender Features

Thanks go to group member K. J. Nelson, who discovered that the DEFENDER game (public domain disk #24) has a "save high scores to disk" option. If you have been playing DEFENDER and have a good high score, and you would like it preserved, reboot the computer (using Control-Apple-Reset or just Control-Reset) with the DEFENDER disk in the drive. When the HELLO program's menu comes up, press ESC to enter BASIC, and type BRUN SCORER (and press return). A menu will appear, listing your "all time greatest" scores to the right, and giving you the options of saving scores to disk, clearing the high scores or getting the high scores from the disk. The high scores will not remain in memory very long - if you want to save them after you stop playing DEFENDER, you should do so as soon as possible. Only the "all time greatest" scores are saved - not "today's greatest".

If you already have the DEFENDER disk, boot it, press ESC to get into BASIC, and enter the following lines:

```
40 PRINT:PRINT"PUBLIC DOMAIN DISK #24: DEFENDER"
85 PRINT "<S>       SAVE/LOAD/CLEAR HIGH SCORES"
135 IF A$="S" OR A$="s" THEN PRINT D$;"BRUN SCORER"
SAVE HELLO
```

This corrects the disk number in the menu (it currently says 22) and gives you a menu option to operate on the high score table. The number of spaces on line 85 (after <S>) is seven. This should line up the text with the rest of the menu. I have modified the master disk in the same way - only old copies of it will need this change made.

The Apple II - Mac Connection

by Alastair Thomson

To send files from Apple II to Macintosh via a null-modem cable requires you to print the text file to a special printer, as outlined in a previous issue of Capital Apple. However, a problem arises because your left margin setting gets carried over as spaces and there is a carriage return gets inserted at the end of **every** line, not just at the end of each paragraph.

The latest Nibble magazine has a large program which strips out these carriage returns, but I hate typing in someone else's program, especially machine language ones, and somebody still has my Merlin manual, Allan. Besides, if a Yank can do it, a Kiwi can do it easier, if slower.

Here is the basic routine I wrote (using jolly old Applesoft and ProDOS) to create a new TXT file from an AppleWorks Word-Processing file, without those 'orrible CRs and spaces.

```
10   D$=CHR$(4)
20   PRINT D$;"BLOAD(original filename), A8192, L(length of
     file), TAWP"
30   N=8492
40   PRINT D$;"OPEN (your new filename)"
50   PRINT D$;"WRITE (your new filename)"
60   Z=PEEK(N)
70   IF PEEK(N+1)=255 THEN GOTO 140
80   IF PEEK(N+1)=208 THEN PRINT: N=N+2: GOTO 60
90   IF PEEK(N+1)>208 THEN N=N+2: GOTO 60
100  LN=PEEK(N+3): IF LN>127 THEN CR=1: LN=LN-128
110  FOR M=N+4 TO N+3+LN
112  IF PEEK(M)=11 THEN PRINT CHR$(32);: GOTO 118
114  IF PEEK(M)<32 THEN GOTO 118
116  PRINT CHR$ (PEEK(M));
118  NEXT M
120  IF CR=1 THEN CR=0: PRINT
130  N=N+LN+4: GOTO 60
140  PRINT D$; "CLOSE"
```

Boot your Apple II using ProDOS. Type in this program, and save it.

(Where there are brackets and lower-case letters, you type in the appropriate information. Do not type the brackets. Make sure your filenames conform to ProDOS requirements. The length of the AWP file can be found under ENDFILE when you do a CATALOG.)

Then make sure the disk containing the specified AppleWorks Word-processing file is in the disk drive, make sure there is sufficient room on the disk to hold the new file as well (it will be smaller than the original AWP file), and type RUN. The new file is a straight TXT file, with carriage returns only where you put them. All other formatting has gone. You will still have your original AppleWorks file unless you used the

same name for both files. Large AWP files (>15K?) may cause memory problems.

You may want to expand on this routine; for example so you can select AppleWorks WP files from a list, or convert several files at one sitting. But I leave that up to you.

This is a brief description of what the program is doing. The BASIC routine reads an AppleWorks WP file (Line 20) into memory. Then a new text file is opened in Line 40

The first 300 bytes of the AWP file is ignored, then each byte is examined by Lines 60 to 130. If it is genuine text then it is printed to the text file in Line 116. When an end-of-file character is encountered, the text file is closed and the program has finished.

How does the program do it?

Here is what the first paragraph of this article looks like as an AppleWorks WP file.

0 217 0 218 78 0 0 76 A problem with sending AppleWorks word-processing files to the Macintosh by **80 0 0 78** "printing" them from AppleWorks is that your left margin setting gets carried **80 0 0 78** across as spaces. Also, a carriage return gets inserted at the end of **1** every **2 46 0 0 172** line, not just at the end of each paragraph. **0 208 17 0 0 143** The latest.....

Any non-text characters are in bold. I have converted them to their decimal ASCII code.

The first 300 characters (bytes) of the file have been ignored because they contain formatting information, of no interest to us. We will use this example to understand how the BASIC routine works. There are three types of code used in AWP files:

Formatting codes: Each formatting code is 2 bytes.

In our example the very first pair of numbers (bytes) are a formatting code (0, 217 actually means a left margin of 0 inches). The next pair of bytes (0, 218) signify a right margin of 0 inches.

Formatting codes always have the second byte larger than (or equal to) 208. We use this property in Line 90 to strip out these formatting codes.

There are two special cases of formatting codes:

(a) if the second byte = 208, there is a blank line followed by a carriage return. These are taken care of in our BASIC program by Line 80.
(b) if the second byte is 255. This marks the end of the AppleWorks file. See Line 70.

Line codes: Each line in an AppleWorks WP file is preceeded by a header of 4 bytes. There are several in our document. Look for the 4 bytes preceeding the word 'line'. The four bytes are 46 0 0 172. Only the last is of interest to us. If this last byte is greater than 127, there is a carriage return needed at the end of the line. (Line 100 in the BASIC program prepares to insert the CR, it actually gets inserted in Line 120.). The first 7 bits of this byte tell us the number of characters in the line. We use this information in Line 110.

Control codes: There are also single-byte control codes - for example, just before the word 'every'. (1) means switch on boldface. Another control code switches it off (2). These are stripped out of the file (they are all less than 32) by Line 114. Line 112 takes care of sticky spaces.

So that's that. Now for converting Super Multiscribe 3.0 files to Microsoft Word 5.02 format...

UNDER EVALUATION

A mini Review of Claris CAD

By Howard Barker

Over Easter 1989, I had the opportunity to get my hands on a Mac SE/20 with Claris CAD on board courtesy of Rose at the Apple Ed Centre. Having only a little CAD experience, and that mainly on that other company's machine with VersaCAD, I found this a lot easier to learn and use by comparison. The tool pallette and pull-down menus give direct access to most commands without having to go down through layers of sub-menus to execute simple drawing commands.

Claris CAD appears to have all the features of professional CAD packages, eg, hatching, fillets, dimensioning, 5 different international drafting standards, zoom, gridsnap, layers etc. It can handle drawings of size A0 - A4.

I found the joining of a series of points to form a smooth curve as in a solid geometrical problem required a little adjustment to give the desired curve but once drawn the points can be easily dragged to adjust the curve.

The package does not have any standard libraries but allows you to create your own. No doubt standard libraries will be optional extras later.

With the limited time I had on the machine I managed to draw: a solid geometry intersection exercise, complete surface developments, a couple of orthographic exercises, and a house plan complete with furniture and fittings.

Claris CAD requires a Mac Plus, SE or II with 1 MB RAM and a hard disk. Files are easily picked up from MacDraw and MacDraw II.

I thoroughly recommend this to anyone with the right hardware and draughting experience.

Another package I have seen and enjoyed using is Super 3D Enhanced. This allows full 3D modelling, animation (ie, rotation of an object in a series of "stills"), light source shading and four views on screen at once with one being active.

[Thanks, Howard, for your letter/review. Hopefully in the next few months we'll have a much more detailed review of this amazing program from Claris - Ed.]

The Apple 5.25" PC Drive

by Matt Snider

What do you do when it is 5:30 p.m. on a Wednesday night, your IBM PC-AT™ monochrome graphics card has just died, you have a Lotus® 1-2-3™ worksheet with raw data on 84 pension participants who would like their personal benefit election forms delivered at 8:30 a.m. on Friday morning and your TOPS® network is down? Get a cup of hot chocolate, take a deep breath (phone Mr. Micro® to see if anyone is still there and will be in 30 minutes) and wish like heck you had an Apple 5.25 PC Drive™ and SE Drive Card™ in your SE on your desk.

This was a situation I found myself in several months ago and it was hairy. Fortunately, I was able to get my Lotus 1-2-3 worksheet transferred to an Excel™ format at Mr. Micro's One Main Place store the next morning using an Apple 5.25 PC Drive, a Macintosh II® and Apple File Exchange© and get the work done. The IBM graphics card was also repaired. However, I was determined that this situation would not come up again.

In an office populated with numerous Macs and IBMs, an Apple 5.25 PC Drive and either a Mac II PC Drive Card™ or an SE Drive Card is almost a fundamental necessity. Numerous files can be transferred back and forth with relative ease by means of the hardware and the translation files that come with the bundled Apple File Exchange program.

The drive controller cards are easily installed. In the Macintosh II, the card goes in one of the NuBUS® slots. In the SE, it obviously goes in the single expansion slot. Since the board is rather heavy by conventional add-on board standards, it comes with plastic support pins that plug into pre-drilled holes on both itself and the SE motherboard (and you thought that the board driller just got sloppy).

I had never been inside my SE until my drive card and drive arrived. I don't take my Mac apart just to gaze at its innards, like some folks I know. I was pleasantly surprised to see how clever the designers at Apple were when they laid out the SE motherboard. Among other things, it's a little easier to pull drive, ground and power cables and get the motherboard out of the chassis. Several cutout notches were added to the side of the Mac SE's motherboard so that you only need to slide the motherboard along the chassis tracks about an inch 'til you can simply remove or reinstall the motherboard by lining up the cutout notches with the matching openings in the Mac's chassis.

The drive card plugs into the 96-pin slot in the SE's motherboard neatly, easily and with a nice positive fit. Be careful to install the plastic support pins in the drive card first and then gently but firmly push the pins into the hole drilled for them on the Mac's motherboard. This arrangement not only supports the drive card above the motherboard but also stabilizes it well as the two boards are reinstalled in the Mac's chassis.

Once the boards are reinstalled, the free end of the small, flat, ribbon cable that gets plugged into the drive board should be mounted (it has a small frame around it) to the frame housing just inside the plastic slot in the back of the Mac SE. Pop out the plastic slot covering and plug the drive's cable into the cable port and your almost ready to go.

In order for the drive to function, you must use the Apple File Exchange (AFE) utility program that comes with the drive and drive card kit. The drive is not a SCSI device, so nothing in the computer or the drive tells the Mac that the drive is there except AFE. When the program is run, a window appears that describes the active drive on your Mac. As soon as you put a 5 1/4-inch disk in the drive and position the drive handle downward, the drive will be polled and the disk's contents, if it is MS-DOS or MS-DOS compatible, will appear in a scrollable window. To transfer files to and/or from the Mac to MS-DOS, simply select the files, click on the direction button and then the copy button.

AFE comes equipped with several standard translators for Text, DCA, Multimate™, Wordstar™ and ProDOS formats. You can even use the translators to translate to or from MS-DOS and/or ProDOS files stored on a Mac disk. In other words, you can translate a Multimate file to a Wordstar file, both MS-DOS files. More translators are available from companies such as DataViz® and more are on the way.

One note about the AppleWorks™ to Microsoft® Works™ translator: It doesn't work. Stick to Passport from the Apple Programmers and Developers Association with its VISA (translator) called Works Convert. Even though it is in (still) an alpha version, it does work. The AFE Works-to-Works translator shows up in the finder as having a creator type of AFEX, but it just does nothing. The Works-to-Works VISA in Passport also has the same file creator type, however under Passport it functions just fine. You figure it out. (I can name that translator in three letters.)

AFE has another nice feature. It keeps track of the files you have translated, regardless of the type of file, in its Users Log. AFE builds a log of all translation activities that can be printed out so you have a record of what has been translated.

In the text translation mode, AFE presents a dialog box that allows you to select carriage return, line feed, special and tab characters for properly formatting a text document translation.

If you find yourself in a real jam and in need of converting some MS-DOS files to the Mac, Apple has made it easy enough through these products. Although it is almost the only show in town (the others being the SCSI-based Daynafile drives and a TOPS network *[And the new SuperDrive floppy available on newer Macs - Ed]*), it's a less expensive route to take than either of those. It has proven useful, even invaluable, at my office (especially when the TOPS network is down) for everyday kinds of spreadsheet and text file exchanges and I'd be a lot less productive without my Apple 5.25 PC Drive and SE Drive Card. If you would like to see one of these drives and the AFE software in action, most authorized Apple dealers (and some of their customers) have them.

This article was reprinted from the Macintosh News Service (MNS), February 1989.

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Works Help #18

Working with Date & Time in the Spreadsheet

by Dennis Lally

Works 2 introduced Date and Time formatting in the Works spreadsheet. As well, new functions for formulas dealing with date and time were also introduced. This article deals primarily with features only available in Works 2, but one method of calculating time will be demonstrated which can be used just as effectively in Works 1.

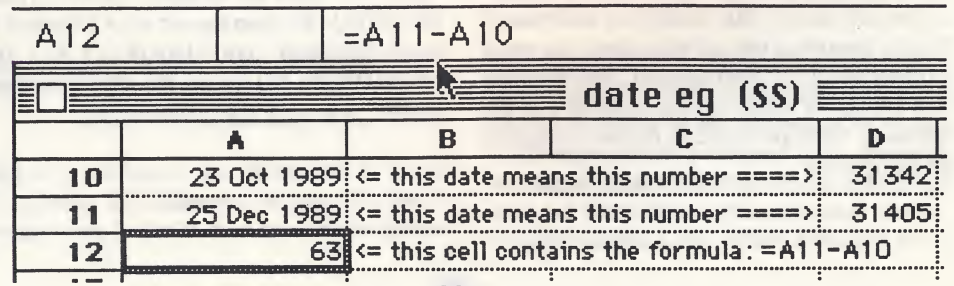
Dates

Before we can understand how time is handled in a spreadsheet we must first understand how dates are used. In all spreadsheets a day is equivalent to the integer 1. In Works every day in every month in every year has its own distinct number. Day zero is the first of January 1904. Day one is the second of January 1904 and so on. The 8th of October 1989 when I wrote this article is day number 31327.

The examples below show what happens in Works 2 when you enter a number and format it as a date. Note that in Works 2 you can also type a date as you would write it in dd/mm/yy fashion and it will assume the number of that date. Thus entering 9/10/89 gives the number 31327. Make sure you do not put an equals sign before it or you will have the formula, =9/10/89, which yields the result of dividing 9 by 10 and then dividing the result by 89, ie. 0.0101123595505617978.

	A	B	C	D	E
1	1	<= number one, General format.		8/10/89 entered in D2 & D3	
2	2/1/04	<= number one, Date format, short.		31327	<= General format
3	2 Jan 1904	<= number one, Date format, medium.		8 Oct 1989	<= Date format
4	2 January 1904	<= number one, Date format, long.			

The advantage of assigning sequential numbers to days is that we can do calculations of duration with ease. Instead of flicking through a calendar or two and counting with a finger to see how many days have elapsed between two dates between two dates. We can enter the dates in separate spreadsheet cells and write simple subtraction formula in a third cell to compare the difference as shown below.



Time

Next month's article will go into using dates in spreadsheets in much more detail with practical examples, but now I would like to move on to the concept of time in a spreadsheet. Since a day is equal to the integer 1, then 24 hours must also equal one. Therefore one hour on a spreadsheet is 1/24th of 1 or roughly 0.0416666666. Thus if 31327 represents 8 October 1989 and 31328 represents 9 October 1989, 31327.0416 is 1:00AM on the 8th of Oct.'89 and 31327.5 is noon on the same day.

A time can be entered into a spreadsheet in a similar manner to entering dates. Type the hour and minutes and seconds, if required, with colons as separators; use military time (24 hour clock). Thus 7:30 in the morning is typed 7:30 and yields 7:30 AM and 7:30 in the evening is typed 19:30 and yields 7:30 PM. The example below shows the numeric value of the cell with the time in the cell to its right.

numeric value	time		numeric value	time
0.0416666666	1:00 AM		0.5	12:00 PM
0.0833333333	2:00 AM		0.5006944444	12:01 PM
0.3125	7:30 AM		0.6458333333	3:30 PM
0.3229166666	7:45 AM		0.9993055555	11:59 PM

Just as with dates, you cannot use these directly entered dates in formulas. For example you cannot enter =10:30-7:30, but if the cell containing 7:30 was say, A1, and the cell containing 10:30 was say, A2, you could enter this formula in another cell: =A2-A1. The result would be the difference between 10:30 and 7:30 expressed as fractions of a day. Thus the answer would not be 3 (hours) as you might expect, but instead would be 0.1354 (rounded to 4 decimal places for convenience). This is because 10:30 AM is 0.4375 and 7:30 AM is 0.3125. Remember 24 hours is equal to 1.0.

A3 =A2-A1

Example 2 (SS)

	A	B	C	D	E	F
1	7:30 AM	0.3125	<= numeric value of cell A1			
2	10:30 AM	0.4375	<= numeric value of cell A2			
3	0.125	3:00 AM	<= what happens when you format result in cell A3 as a date.			
4						

So how do we express the difference between two times in simple hours and minutes that 'the rest of us' (to coin an early Mac cliché) can understand? Simply formatting the cell which holds the result as time gives us 3:00 AM because 0.1354 represents that fraction of a day that you reach at 3 in the morning. We're getting close, but we can't get rid of that AM tag.

Works 2 provides some new functions for working with time. These are: HOUR(), MINUTE() and SECOND(). By entering our A2-A1 formula in these functions like =HOUR(A2-A1) and =MINUTE(A2-A1) we get the result illustrated below:

A5 =Second(A2-A1)

Example 2 (SS)

	A	B	C	D	E
1	7:30 AM	Start	0.3125	<= numeric value of A1	
2	10:45 AM	Finish	0.4479	<= numeric value of A2	
3	3	Elapsed Hours	3:15 AM	<= Result of =A2-A1 formatted as date	
4	14	Elapsed Minutes			
5	59	Elapsed Seconds			

Note that this technique appears works well for hours, but where minutes beyond a complete hour are involved it appears to sell us one minute short.

Apparently Works doesn't regard time as we do and sees the difference between 10:45 AM and 7:30 AM as 3 hours and 14 minutes (and 59 seconds) instead of 3 hours 15 minutes because, perhaps, it doesn't see the final second of 10:45 AM as having been completed. Unfortunately, this is inconsistent with the 3:15 AM result we get if we simply format the difference between the two times as a time. Nevertheless, this technique can be usefully employed for various time-keeping and time-charging exercises. Clients can reassured they won't be charged an extra minute until that minute is well and truly complete!

Time for all Works

To work around this apparent discrepancy I have written a formula which does not involve any time formatting and so can be used with any version of Works.

Setting out a spreadsheet as illustrated below separates hours and minutes and allows us to simply calculate the difference between hours (provided hours are entered in 24 hour style, ie. 15 for 3 PM).

B5 =(B3-B1)+(B4-B2)/60

Example 3

	A	B	C
1	Start Hour:	7	
2	Start Minutes:	59	
3	Finish Hour:	10	
4	Finish Minutes:	57	
5	Elapsed Time:	2.97	
6			

The following formula is entered into cell B5:

=(B3-B1)+(B4-B2)/60.

(B3-B1) calculates the difference in hours. Calculating the difference between minutes is simple when the finish time shows more minutes than the start time, eg. 7:15 start and 10:45 finish. We simply subtract 15 (cell B4) from 45 (cell B2) and divide by 60 to get the fraction of an hour (1/2) expressed as a decimal (.5). However, sometimes it can be the other way around, eg. 7:45 start and 10:15 finish. The difference here is a negative number (-30). When divided by 60 we

get a negative decimal (in this case -0.5). This actually works out well since adding a negative number is the same as subtracting. So although, in the 7:15 start, 10:45 finish example, (B3-B1) will yield 3, (B4-B2) divided by 60 will yield -0.5. Adding these two results together gives us the correct answer: 2.5 hours.

The final illustration shows a practical adaptation of this formula for recording many records, as in a time sheet. It can be used with any version of Works.

Example 4 (SS)

	A	B	C	D	E	F	G	H
1	Date	Start	Start	Finish	Finish	Duration		
2	dd/mm/yy	Hour	Minutes	Hour	Minutes	in Hours		
3	1/10/89	8	30	10	45	2.25		
4	5/10/89	12	30	15	0	2.50		
5	9/10/89	11	15	17	35	6.33		
6						11.08	<= Total Hours	
7	Note: lines drawn with Works 2 Borders command.							

This article was inspired by a question someone asked me at one of our meetings. I appreciate being confronted with such problems as they offer me practical topics for this Works Help column.

Please understand though that at no time will your problem become my problem because I like helping people with problems!

Index to the MS Works Help File

Dennis Lally has been faithfully writing the MS Works Help File for a long time now. Printed here is a complete list of the items he's covered in his column, so you won't have to search through your back-issues every time you want to find something.

#1	March 1988, Vol 5.2	Sorting your spreadsheets by date
#2	April 1988, Vol 5.3	Doing maths with dates
#3	May 1988, Vol 5.4	Manipulating Database summaries with the Spreadsheet
#4	June 1988, Vol 5.5	Using Works to print invoices
#5	July 1988, Vol 5.6	Using logic
#6	August 1988, Vol 5.7	Expert systems
#7	September 1988, Vol 5.8	Expert systems, cont.
#8	October 1988, Vol 5.9	Writing your own manuals
#9	November 1988, Vol 5.10	Full-impact with Works
#10	December 1988, Vol 5.11	A Christmas message
#11	February 1989, Vol 6.1	A scoop preview of Works 2.0
#12	April 1989, Vol 6.3	More on Works 2
#13	May 1989, Vol 6.4	Graph It
#14	June 1989, Vol 6.5	Using the right chart
#15	July 1989, Vol 6.6	Drawing in Works 1.x
#16	August 1989, Vol 6.7	Printing Labels
#17	September 1989, Vol 6.8	Shortcuts and Tips
#18	October 1989, Vol 6.9	Working with date and time in the spreadsheet

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Phone: Warren at 881-276 after 6:00 pm.

PostScript

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- To exchange and disseminate information among the members concerning the computer arts and sciences.
- To publish books, newsletters, magazines and periodicals for the benefit and education of the members and the general public.
- To conduct and sponsor seminars, lectures and courses relating to the computer arts and sciences.
- To provide technical assistance to members of the group.
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